DATE:_____

Materials and Research
Delaware Department of Transportation
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AIR CONTENT OF FRESHLY MIXED CONCRETE BY THE VOLUMETRIC METHOD PERFORMANCE CHECKLIST (ASTM C-173)

		YES	NO	RECHECK DATE P/F
1.	**Obtain a sample of freshly mixed concrete in accordance with ASTM C 172.**	_____	_____	_____
2.	**Dampen the inside of the bowl. Fill the bowl in two equal layers.**	_____	_____	_____
3.	**Rod each layer 25 times. When rodding the second layer, penetrate the prior layer approximately 1 in.**	_____	_____	_____
4.	**Tap the sides of the measure 10 to 15 times with the mallet after each layer is rodded.**	_____	_____	_____
5.	**Strike off a slight excess of concrete flush with the top of the bowl using the strike-off bar and wipe the flange clean.**	_____	_____	_____
6.	**Wet the inside of the top section and the gasket.**	_____	_____	_____
7.	**Attach the top section to the bowl, insert the funnel, add at least one pint [0.5 L] of water, add the selected amount of alcohol, and then add water until it appears in the neck of the top section.**	_____	_____	_____
8.	**Remove the funnel and adjust the liquid level until the bottom of the meniscus is level with the zero mark.**	_____	_____	_____
9.	**Attach and tighten the watertight cap.**	_____	_____	_____
10.	**Repeatedly invert the air meter and shake horizontally, for no more than 5 seconds at a time and for a minimum of 45 seconds in total, to free the concrete from the base.**	_____	_____	_____
11.	**Vigorously roll the air meter, in ¼ to ½ turns, for a minimum of 1 minute. Occasionally turn the base about 1/3 of a turn during the rolling process.**	_____	_____	_____
12.	**If the meter leaks while inverting or rolling, start a new test on a new sample.**	_____	_____	_____
13.	**Place the meter upright, loosen the cap, and allow the liquid level to stabilize.**	_____	_____	_____

14. **If it takes more than 6 minutes for the liquid to stabilize or there is more than 2 percent (in air division) of foam above the liquid, Discard the sample and start a new test; increase the amount of alcohol used.** _____ _____ _____

15. **When rolling has occurred once,**
A. Read the liquid level in the neck to the nearest 0.25% _____ _____ _____

B. Record the initial meter reading. Retighten the cap and repeat steps 11 through 14. _____ _____ _____

16. **When rolling has occurred twice,**
A. Read the liquid level in the neck to the nearest 0.25% _____ _____ _____

B. If the second reading has changed from the initial reading by more than 0.25%, record this reading as the new reading. Repeat steps 11 through 14. _____ _____ _____

C. If the second reading has not changed from the initial reading by more than 0.25%, record this reading as the final meter reading. _____ _____ _____

17. **If/when rolling has occurred three times,**
A. Read the liquid level in the neck to the nearest 0.25% _____ _____ _____

B. If the third reading has changed from the initial reading by more than 0.25%, discard the sample and start a new test; increase the amount of alcohol used. _____ _____ _____

C. If the third reading has not changed from the initial reading by more than 0.25%, record this reading as the final reading. _____ _____ _____

18. **Disassemble the apparatus, examine the contents, and determine if the test is valid.** _____ _____ _____

19. **Calculate the air content:**
Air content = (meter reading) – (alcohol correction, if needed) + (number of cups of water, if used) _____ _____ _____

20. **Properly report (record) the results.** _____ _____ _____

Comments:_____

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_____ _____
SUPERVISOR **TECHNICIAN**